

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION-2022

B.Tech-I Semester (All Branches)

COURSE CODE (CREDITS): 19B11CI111 (2)

MAX. MARKS: 25

COURSE NAME: PROGRAMMING FOR PROBLEM SOLVING-II

COURSE INSTRUCTORS: Dr.@{Pardeep, Ravindara, Amol, Amit, Avni, Nishant & Vikas}

MAX. TIME: 1 Hour 30 Min

Note: All questions are compulsory. Marks are indicated against each question in square brackets. Do not use advanced topics like arrays etc. while answering programming questions

Q1. Consider Tower of Hanoi puzzle for N disks and three rods (A,B and C) with the following rules: The objective of the puzzle is to move the entire stack(here considered A) to another rod (here considered C), obeying the following simple rules: (i) Only one disk can be moved at a time. (ii) Each move consists of taking the upper disk from one of the stacks and placing it on top of another stack i.e. a disk can only be moved if it is the uppermost disk on a stack. (iii) No disk may be placed on top of a smaller disk. Write a program in C to the solution of this puzzle for N Disks. Do the dry run of your program for 3 disks. [CO-4] [5+2]

Q2. The Fibonacci numbers are the numbers in the following integer sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, Write a program in C using for loop to print the sequence of series up to n terms entered by the user

Note: Do not use user defined functions while answering.

[CO4] [3]

Q3. Write a program in C to compute the sum of digits of a 5 digit number entered by the user using call by value and call by reference logic. [CO-5 & CO6] [2.5+2.5]

Q4. What do you mean by actual and formal arguments? Mark them in a simple C program. Write and justify your output for the following code segment: `int a = 1 ; printf ("%d %d %d", a, ++a, a++);` [CO-5] [2+3]

Q5. Write a program in C to display the pattern like right angle triangle as shown below:

```
1
12
123
1234
.....
```

The number of rows is to be entered by the user.

[CO4][5]